

a plurality of radio access networks each connected
to mobile stations via radio links; and

wherein each of the radio access networks has at least one base station controller and at least one radio base station which is connected to the base station controller to perform radio communications with a plurality of mobile stations, and each of the base station controllers in the radio access network is connected to the plurality of packet nodes to each other, and selects one of the plurality of packet nodes in accordance with a state of each mobile station to establish a logical connection to be used in IP packet communication of the mobile station.

2. A mobile IP network system according to claim 1, wherein each of said base station controllers selects, with respect to a mobile station moved from a control area of another radio access network to the control area of the base station controller, a previous packet node which has communicated with the mobile station in the control area of the another radio access network and to establish a logical connection for the mobile station.

3. A mobile IP network system according to claim 2, wherein each of said base station controllers has means for monitoring a transmitting and receiving state of data to and from a mobile station which has moved from the control area of another radio access network, thereby to cancel the logical connection between the base station controller and the previous packet node, and to establish a new logical connection for the mobile station between the base station controller and a preliminarily designated specific packet node, upon detecting that data transmission and reception of the mobile station is ceased.

4. A mobile IP network system according to claim 3, wherein said specific packet node has means for notifying a home agent node of the mobile station connected to the IP network, of setting of a new logical connection for the mobile station so that the home agent node having received the notification transfers IP packets, which are destined for the mobile station and received thereafter from the IP network, to the specific packet node.

5. A mobile IP network system according to claim 1, wherein each of the plurality of packet nodes has a foreign agent function for transferring an IP packet received from a home agent node connected to the IP network to any of the base station controllers.

6. A method of switching a connection for communication between a mobile station connected to any of a plurality of radio access networks via a radio link and a plurality of packet nodes connected to an IP network, comprising:

5 a step of establishing a first logical connection to be used for an IP packet communication of a mobile station connected to a first radio access network, between the mobile station and a first packet node which is preliminarily related with the first radio access network;

10 a step of connecting the mobile station to a second radio access network adjacent to the first radio access network; and

15 a step of establishing a second logical connection between the second radio access network and the first packet node,

wherein the IP packet communication between the mobile station and the first packet node is maintained via the second logical connection.

20 7. A connection switching method according to claim 6, further comprising a step of canceling, upon detecting that data transmission and reception in the second logical connection is ceased, the second logical connection and establishing a third logical connection to be used for an IP packet communication of the mobile station between the

second radio access network and a second packet node which is preliminarily related with the second radio access network.

8. A base station controller for a radio access network for transmitting and receiving an IP packet to and from a packet node which is connected to an IP network and has a foreign agent function, comprising:

a first communication interface for connection to a radio base station, a second communication interface for communication with a plurality of packet nodes connected to the IP network, and a control unit connected to the first and second communication interfaces,

wherein the control unit selectively establishes a logical connection to be used for an IP packet communication of a mobile station connected to the radio base station via a radio channel, between the base station and any of the packet nodes via the second interface.

9. A base station controller according to claim 8, wherein said control unit has means for selecting a first packet node which has been communicating with a mobile station in a control area of another radio access network, to establish a first logical connection to be used for the IP packet communication of the mobile station which has moved into a control area of the base station controller from the

another radio access network.

10. A base station controller according to claim 8, wherein said control unit has means for notifying a base station controller in another radio access network of identification information of a previous packet node which has communicated with the mobile station moved from a control area of the base station controller to the another radio access network.

11. A base station controller according to claim 9, wherein said control unit comprises:

means for monitoring transmission data in the first logical connection; and

means for switching the first logical connection to a second logical connection which is connected to a second packet node when it is detected by the monitoring means that the transmission data is stopped.

12. A base station controller according to claim 11, wherein said second communication interface is connected to a communication network for connecting the plurality of packet nodes, and said switching means cancels the first logical connection and establishes a second logical connection connected to the second packet node, which is preliminarily designated to the base station controller, when said monitoring means detects the stop of transmission data.